

## ABSTRACT

A submerged, vertically-mounted membrane device, the device receiving a gas-sparged feed stock at a bottom feed inlet to provide airlift circulation of the feed stock through the device and separating the feed stock into filtrate and residual gas-containing retentate which passes from the top end of the device. The device comprises a structure of one or more monolith segments of porous material each monolith segment defining a plurality of passageways extending longitudinally from a bottom feed end face to a top retentate end face. A porous membrane is applied to the walls of the monolith segment passageways to provide a separating barrier. At least one filtrate conduit within the device carries filtrate from within the device toward a filtrate collection zone of the device, and the filtrate conduit provides a path of lower flow resistance than that of alternative flow paths through the porous material. A seal is provided to separate feed stock and retentate from the filtrate collection zone.